

## **REMARKS**

In view of the following discussion, the Applicants submit that none of the claims now pending in the application is unpatentable under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in allowable form.

### **I. OBJECTION TO CLAIM 25**

Claim 25 stands objected to for informalities. In response, the Applicants have amended claim 25 in order to more clearly recite aspects of the invention.

Specifically, claim 25 has been amended to recite “wherein the forming the single feature vector further comprises ...,” replacing “wherein the forming further comprises ....” The Applicants respectfully submit that this amendment makes it clear that the Applicants are referring to the step of “forming a single feature vector ...” recited in independent claim 1, from which claim 25 depends.

In light of this amendment, the Applicants respectfully request that the objection to claim 25 be withdrawn.

### **II. REJECTION OF CLAIMS 1-5, 7-10, AND 21-28 UNDER 35 U.S.C. § 103**

#### **A. Claim 1**

Claim 1 stands rejected under 35 U.S.C. §103 as being unpatentable over the Grimm et al. patent (United States Patent No. 5,828,843, issued October 27, 1998, hereinafter “Grimm”) in view of the George et al. patent (United States Patent No. 6,944,645, issued September 13, 2005, hereinafter “George”) and further in view of the Kamei et al. article (“Community Organizer: Supporting the Formation of Network Communities through Spatial Representation,” hereinafter “Kamei”). The Applicants respectfully traverse the rejection.

Primarily, the Applicants respectfully submit that none of Grimm, George, and Kamei teaches or suggests the novel invention of creating a single (i.e., unified) feature vector based on a user’s communication interest, on network attributes, and on application attributes, as recited by Applicants’ independent claim 1.

The Examiner acknowledges in the Office Action that “the combined teachings of Grimm and George do not explicitly teach the steps of: forming a single feature vector based on the communication interest, network attributes, and application attributes, wherein the single feature vector is used to cluster the user with one or more other users based on similarly-formed single feature vectors associated with one or more other users” (Office Action, Page 5). The Examiner submits, however, that this gap in the teachings of Grimm and George is bridged by Kamei. The Applicants respectfully disagree.

By contrast, Kamei teaches measuring or quantifying a user’s communication interest and presence individually, not as a single feature vector representative of both metrics. Moreover, neither of these feature vectors accounts for network or application attributes. Specifically, Kamei associates “the presence of a user as well as messages, chat rooms and URLs” with feature vectors (Kamei, Section 4.1, first paragraph). Kamei further discloses that “[t]he user’s interests are then also represented as a feature vector” (Kamei, Section 4.1, first paragraph). In other words, Kamei appears to teach the use of multiple feature vectors, each of which represents something different (e.g., the user’s presence or the user’s interests). Furthermore, as discussed above, none of these feature vectors accounts for network or application attributes. Thus, Kamei fails to teach or suggest representing a user by forming a single feature vector that is based on the user’s communication interest, network attributes, and application attributes, as recited in the Applicants’ independent claim 1.

As such, Grimm in view of George and further in view of Kamei fails to teach or suggest representing a user by forming a single feature vector that is based on the user’s communication interest, network attributes, and application attributes, where this single feature vector may be used for the purposes of comparing two or more users for compatibility in a collaborative application.

The Applicants’ independent claim 1 positively recites:

1. A method of constructing a multi-type feature vector comprising:  
obtaining a communication interest of a user as represented by at least

one of: a user request for a content update or a user subscription to a specific data item or to a set of proximal data sources;  
 obtaining network attributes;  
 obtaining application attributes; and  
forming a single feature vector based on the communication interest, network attributes, and application attributes,  
 wherein the single feature vector is used to cluster the user with one or more other users based on similarly-formed single feature vectors associated with the one or more other users. (Emphasis added)

As discussed above, Grimm, George, and Kamei, singly or in any permissible combination, fail to teach or suggest the novel invention of creating a single feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claim 1. Accordingly, the Applicants respectfully submit that independent claim 1 is not unpatentable over Grimm in view of George and further in view of Kamei and is allowable.

#### **B. Claims 2, 7-9, 22-24, and 26**

Claims 2, 7-9, 22-24, and 26 stand rejected under 35 U.S.C. §103 as being unpatentable over Grimm in view of the George and Kamei and further in view of the Modiri et al. patent (United States Patent No. 6,192,401, issued February 20, 1001, hereinafter "Modiri"). The Applicants respectfully traverse the rejection.

As discussed above, Grimm in view of George and further in view of Kamei fails to teach or suggest the novel invention of creating a single (i.e., unified) feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claims 1, 2, and 26. Modiri fails to bridge this gap in the teachings of Grimm, George and Kamei. Specifically, Modiri also fails to teach or suggest representing a user by forming a single feature vector that is based on the user's communication interest, network attributes, and application attributes, where this single feature vector may be used for the purposes of comparing two or more users for compatibility in a collaborative application.

Independent claim 1 has been recited above. The Applicants' independent

claims 2 and 26 positively recite:

2. A method of clustering a multi-type vector space comprising:  
obtaining network attributes from a network having a plurality of nodes;  
obtaining application attributes of an application;  
obtaining user's communication interest as represented by at least one of:  
a user request for a content update or a user subscription to a specific data item  
or to a set of proximal data sources;  
forming a plurality of feature vectors, one for each of the plurality of nodes,  
where each single one of the plurality of feature vectors is based on the user's  
communication interest, network attributes, and application attributes; and  
clustering the plurality of nodes based on the plurality of feature vectors.  
(Emphasis added)

26. A computer readable storage medium containing an executable program  
for clustering a multi-type vector space, where the program performs steps  
comprising:  
obtaining network attributes from a network having a plurality of nodes;  
obtaining application attributes of an application;  
obtaining user's communication interest as represented by at least one of:  
a user request for a content update or a user subscription to a specific data item  
or to a set of proximal data sources;  
forming a plurality of feature vectors, one for each of the plurality of nodes,  
where each single one of the plurality of feature vectors is based on the user's  
communication interest, network attributes, and application attributes; and  
clustering the plurality of nodes based on the plurality of feature vectors.  
(Emphasis added)

As discussed above, Grimm, George, Kamei, and Modiri, singly or in any permissible combination, fail to teach or suggest the novel invention of creating a single feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claims 1, 2, and 26. Accordingly, the Applicants respectfully submit that independent claims 1, 2, and 26 are not unpatentable over Grimm in view of George and Kamei and further in view of Modiri and are allowable.

Claims 7-9 and 22-24 depend, respectively, from independent claims 2 and 1 and recite at least all of the features recited in independent claims 1 and 2. As such, and for at least the reasons stated above with respect to independent claims 1 and 2,

the Applicants respectfully submit that claims 7-9 and 22-24 are also not unpatentable over Grimm in view of George and Kamei and further in view of Modiri and are allowable.

### **C. Claims 3-4 and 27-28**

Claims 3-4 and 27-28 stand rejected under 35 U.S.C. §103 as being unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of the Johnson patent (United States Patent No. 6,078,946, issued June 20, 2000, hereinafter “Johnson”). The Applicants respectfully traverse the rejection.

As discussed above, Grimm in view of George and Kamei and further in view of Modiri fails to teach or suggest the novel invention of creating a single (i.e., unified) feature vector based on a user’s communication interest, on network attributes, and on application attributes, as recited by Applicants’ independent claims 2 and 26. Johnson fails to bridge this gap in the teachings of Grimm, George, Kamei, and Modiri. As such, the Applicants respectfully submit that independent claims 2 and 26 are also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Johnson.

Claims 3-4 and 27-28 depend, respectively, from independent claims 2 and 26 and recite at least all of the features recited in independent claims 2 and 26. As such, and for at least the reasons stated above with respect to independent claims 2 and 26, the Applicants respectfully submit that claims 3-4 and 27-28 are also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Johnson and are allowable.

### **D. Claims 5 and 21**

Claims 5 and 21 stand rejected under 35 U.S.C. §103 as being unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of the Solotorevsky et al. patent application (United States Patent Application Publication No. 2005/0010571, published January 13, 2005, hereinafter “Solotorevsky”). The

Applicants respectfully traverse the rejection.

As discussed above, Grimm in view of George and Kamei and further in view of Modiri fails to teach or suggest the novel invention of creating a single (i.e., unified) feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claims 1 and 2. Solotorevsky fails to bridge this gap in the teachings of Grimm, George, Kamei, and Modiri. As such, the Applicants respectfully submit that independent claims 1 and 2 are also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Solotorevsky.

Claims 5 and 21 depend, respectively, from independent claims 2 and 1 and recite at least all of the features recited in independent claims 1 and 2. As such, and for at least the reasons stated above with respect to independent claims 1 and 2, the Applicants respectfully submit that claims 5 and 21 are also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Solotorevsky and are allowable.

#### **E. Claim 10**

Claim 10 stands rejected under 35 U.S.C. §103 as being unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of the Tang et al. patent application (United States Patent Application Publication No. 2005/0076137, published April 7, 2005, hereinafter "Tang"). The Applicants respectfully traverse the rejection.

As discussed above, Grimm in view of George and Kamei and further in view of Modiri fails to teach or suggest the novel invention of creating a single (i.e., unified) feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claim 2. Tang fails to bridge this gap in the teachings of Grimm, George, Kamei, and Modiri. As such, the Applicants respectfully submit that independent claim 2 is also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Tang.

Claim 10 depends from independent claim 2 and recites at least all of the features recited in independent claim 2. As such, and for at least the reasons stated above with respect to independent claim 2, the Applicants respectfully submit that claim 10 is also not unpatentable over Grimm in view of George, Kamei, and Modiri and further in view of Tang and is allowable.

#### **F. Claim 25**

Claim 25 stands rejected under 35 U.S.C. §103 as being unpatentable over Grimm in view of George and Kamei and further in view of the Posey, Jr. patent n (United States Patent No. 7,184,444, issued February 27, 2007, hereinafter "Posey"). The Applicants respectfully traverse the rejection.

As discussed above, Grimm in view of George and further in view of Kamei fails to teach or suggest the novel invention of creating a single (i.e., unified) feature vector based on a user's communication interest, on network attributes, and on application attributes, as recited by Applicants' independent claim 1. Posey fails to bridge this gap in the teachings of Grimm, George, and Kamei. As such, the Applicants respectfully submit that independent claim 1 is also not unpatentable over Grimm in view of George and Kamei and further in view of Posey.

Claim 25 depends from independent claim 1 and recites at least all of the features recited in independent claim 1. As such, and for at least the reasons stated above with respect to independent claim 1, the Applicants respectfully submit that claim 25 is also not unpatentable over Grimm in view of George and Kamei and further in view of Posey and is allowable.


### **III. CONCLUSION**

Thus, the Applicants submit that all of the presented claims fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all of the presented claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Kin-Wah Tong, Esq. at (732) 842-8110 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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Date

  
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Kin-Wah Tong  
Registration No. 39,400  
WALL & TONG, L.L.P.  
595 Shrewsbury Avenue  
Shrewsbury, NJ 07702  
Telephone: (732) 842-8110  
Facsimile: (732) 842-8388  
Attorney for Applicant(s)